

REMARKS

By this Amendment, Applicants cancel claims 1-6, without prejudice or disclaimer of the subject matter thereof and amend claim 8 to more appropriately define the present invention. Applicants submit that no new matter has been added by these amendments. Claims 8-13 are thus currently pending.

In the Final Office Action ("FOA"), the Examiner objected to the Amendment filed on November 5, 2003; rejected claims 8-13 under 35 U.S.C. § 112, first paragraph; and rejected claims 1-6 and 8-13 under 35 U.S.C. § 103(a) as unpatentable over Applicants' Admitted Prior Art ("AAPA") in view of Ino, U.S. Patent No. 5,317,432 ("Ino") and Kuriyama et al., U.S. Patent No. 6,166,405 ("Kuriyama"). Applicants address the objection and rejections as follows.

I. Response to Objection to November 5, 2003 Amendment

The Examiner objected to the Amendment filed November 5, 2003 under 35 U.S.C. § 132 for introducing new matter into the disclosure. Specifically, the Examiner alleged that the phrase "dielectric layer 53 containing the hydrogen **can be preferably formed above only upper portion of the photodiode.**" (FOA at 2, ¶ 2 (emphasis original).) By this Amendment, Applicants propose amending the specification at page 7 to read "[t]he dielectric layer 53 containing the hydrogen can be formed above only upper portion of the photodiode 47." Applicants submit that no new matter will be introduced by this amendment and the amendment is supported by the original specification.

When determining whether an amendment introduces new matter:

The claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter. M.P.E.P. § 2163.06(III), ed. 8, rev. 1 (Feb. 2003) (quoting *In re Benno*, 768 F.2d 1340 (Fed. Cir. 1985)).

In this case, the subject matter which Applicants add to page 7 was included in originally-filed claim 7. Specifically, claim 7 recited “[t]he method as recited in claim 1, wherein the step of forming a dielectric layer includes forming it only on an upper portion of the photodiode.” Claim 7 was canceled by the Amendment filed November 5, 2003, but claim 7 was canceled without prejudice or disclaimer of the subject matter thereof. Thus, the proposed amendment to the specification at page 7 merely incorporates the subject matter of claim 7 into the description. Thus, this amendment will not introduce new matter.

II. Response to Rejection Under 35 U.S.C. § 112, first paragraph

The Examiner rejected claims 8-13 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Examiner alleged that “[t]he original specification does not describe the step of forming the dielectric above an **upper portion of the photodiode**,” as recited in claim 8. (FOA at 2-3, ¶ 3 (emphasis original).) In response, Applicants submit that the subject matter recited in claim 8 is fully supported by the originally-filed specification.

“[T]o satisfy the written description requirement, an applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention, and that the invention, in that context, is whatever is now claimed.” M.P.E.P. § 2163.02 at 2100-171. Furthermore, “[t]he claims as filed in the original specification are part of the disclosure ... [and] applicant may amend the specification to include the claimed subject matter.” M.P.E.P. § 2163.06(III).

By this Amendment, Applicants propose amending the specification at page 7 to read “[t]he dielectric layer 53 containing the hydrogen can be formed above only upper portion of the photodiode 47.” The subject matter which Applicants add to page 7 was included in originally-

filed claim 7. Specifically, claim 7 recited “[t]he method as recited in claim 1, wherein the step of forming a dielectric layer includes forming it only on an upper portion of the photodiode.” Thus, the subject matter recited in claim 8 is fully supported by the specification. Accordingly, Applicants request that the Examiner withdraw the rejection of claims 8-13 under section 112, first paragraph.

III. Response to Rejections Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-6 and 8-13 as unpatentable over AAPA in view of Ino and Kuriyama under § 103(a). By this Amendment, Applicants cancel claims 1-6, without prejudice or disclaimer of the subject matter thereof. Upon entry of this Amendment, the rejection of claims 1-6 under section 103(a) is rendered moot.

With regard to claims 8-13, Applicants submit that a *prima facie* case of obviousness has not been established because the cited references fail to teach or suggest all the claim elements.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met. First, the prior art reference (or references when combined) must teach or suggest all the claim elements. Furthermore, “[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03 (quoting *In re Wilson*, 424 F.2d 1382, 1385 (C.C.P.A. 1970)). Second, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify a reference or to combine reference teachings. Third, there must be a reasonable expectation of success. M.P.E.P. § 2143 at pp. 2100-122 to 127.

Claim 8 is directed to a method of fabricating a CMOS image sensor having a plurality of unit pixels comprising a combination of elements including, *inter alia*, “forming a dielectric layer having hydrogen on the insulting layer above an upper portion of the photodiode.”

In the rejection, the Examiner correctly admitted that AAPA does not teach forming a dielectric layer having hydrogen on the insulating layer above an upper portion of the photodiode. (FOA at 3.) To attempt to cure this deficiency of AAPA, the Examiner alleged that Ino shows a dielectric layer over the insulating layer, diffusing hydrogen ions from the dielectric layer, and removing the dielectric layer by a dry etching process. (FOA at 3-4.) Ino discloses forming a silicon nitride film 152, but does not teach or suggest “forming a dielectric layer having hydrogen on the insulating layer above an upper portion of the photodiode.” See Ino, Fig. 28. Thus, Ino fails to cure at least this deficiency of Ino. Accordingly, AAPA and Ino, whether taken alone or in combination, fail to teach or suggest at least this element of claim 8.

The Examiner also cited Kuriyama but did not allege that Kuriyama taught “forming a dielectric layer having hydrogen on the insulating layer above an upper portion of the photodiode,” as recited in claim 8. In fact, Kuriyama fails to teach or suggest at least this claim element. Therefore, AAPA, Ino, and Kuriyama, whether taken alone or in combination, fail to teach or suggest at least “forming a dielectric layer having hydrogen on the insulating layer above an upper portion of the photodiode.” Accordingly, a *prima facie* case of obviousness has not been established for claim 8. For at least this reason, the rejection of claim 8 under section 103(a) is improper and should be withdrawn.

Claims 9-13 are allowable at least due to their dependence from allowable claim 8. “If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious.” M.P.E.P. § 2143.03 at 2100-126 (citing *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988)).

IV. Conclusion

Applicants respectfully request that this Amendment under 37 C.F.R. § 1.116 be entered by the Examiner, placing claims 8-13 in condition for allowance. Applicants submit that the

proposed amendment of claim 8 does not raise new issues or necessitate the undertaking of any additional search of the art by the Examiner, since all of the elements and their relationships claimed were either earlier claimed or inherent in the claims as examined. Therefore, this Amendment should allow for immediate action by the Examiner.

Finally, Applicants submit that the entry of the amendment would place the application in better form for appeal, should the Examiner dispute the patentability of the pending claims.

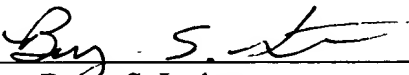
In view of the foregoing remarks, Applicants submit that this claimed invention, as amended, is neither anticipated nor rendered obvious in view of the prior art references cited against this application. Applicants therefore request the entry of this Amendment, the Examiner's reconsideration and reexamination of the application, and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: April 22, 2004

By: 
Bryan S. Latham
Reg. No. 49,085